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ABSTRACT

The manual describes instructional materials for visually impaired children at the prereadiness, readiness, and academic levels (prekindergarten through primary grades). Chapter I, which surveys instructional materials, contains a listing of materials by curricular areas (including communication, math, and daily living); a listing of materials in alphabetical order (with entries offering name, description, and purpose of the material); addresses of commercial distributors of materials; and additional sources of catalogs and aids. A second chapter offers an annotated bibliography of approximately 60 resources on the education of visually impaired students. A final chapter outlines guidelines and activities for the following program areas: music, career education, physical education, fingermath, braille reading, and Optacon reading. (SB)

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THE DAWN OF DEVELOPMENT:

A Guide for Educating Young Children With Visual Impairments

Volume II: Program Manual

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With Visual Impairments

Volume II: Program Manual

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Introduction

The technological explosion of the last two decades has placed tools in the hands of educators which before had resided only in the minds of science fiction writers. These tools perform some miraculous feats for visually impaired individuals. They synthesize "voices" to read written symbols. They warn the moving individual of impending obstructions in the path. They have made vision a functional sense again for many individuals with the use of new lens systems and surgical strategies.

Other subtle changes have also allowed more visually impaired individuals to realize educational and social independence than ever before. We appreciate now more than ever the importance of early identification of and early intervention with visually impaired children. We recognize the need to prepare children to function in a seeing society. New educational approaches and instructional materials offer educators the opportunity to make significant improvements in the quality of life of visually impaired children.

Our understanding of the world of the visually impaired learner has increased considerably due to the research and writings of Fraiberg (1977), Lowenfeld (1973), DuBose (1976), and others. Nevertheless, our new knowledge has unraveled many more difficult questions and problems. Young children with vision problems share many characteristics with their sighted peers. They develop and learn as individuals, responding to their respective environments in unique ways. They reject teaching strategies which are not compatible with their emotional needs and "thrive" on strategies which recognize children as individuals. The ability of all children to form the mental representations that are the basis of cognition and language is directed by how children absorb the information contained in the environment. When a sense is impaired, a greater burden is placed on other senses to "define" qualities of the environment so it still retains its learning potential.

A small body of research describes the differences between the sighted and the visually impaired. Fraiberg (1977), for example, attributes to limited visual experiences the delay in early language of blind children. She has also found delays in object concept, a major milestone in the development of representational thought (Fraiberg, 1968), which in turn influences acquisition of spatial concepts and causality. Evidence has also been presented (Zeibelson & Barg, 1967) which suggests that the blind child has difficulty storing and organizing mental representations. However, one promising conclusion is supported by several writers (Ashcroft and Harley, 1966; Brekke, Williams & Tait, 1974; Fraiberg, 1968; Lowenfeld, 1964). If appropriate stimulation is provided during the first years of a visually impaired child's life, the chances of approaching normal behavioral expectations by five years of age are very good.

Changes in Emphasis

The philosophy of service providers has changed over the years. Part of this has come about through necessity due, for example, to the reduction in cases of retrolental fibroplasia and to the technological explosion. About 90 percent of visually impaired children served in the public schools are learning to read using print. The old concept of "sight-saving" has evolved into a belief in visual stimulation and visual efficiency. And the use of new optical aids has transformed many legally blind children from braille to print readers.

Residential and public schools have also begun to address two other critical areas: parent-child interaction and career education. DuBose (1976) and Wills (1979) offer discussions of the parents' role in development of the visually impaired child. Of particular importance to development, it appears, is the parents' attitude toward and quality of interaction with

the child prior to entering school (Hallenbeck, 1954; Lowenfeld, 1964). While little can be done by school personnel during this period, such is not the case once the child begins a school program. From this point forward, school personnel must place a high priority on supporting the parents' positive interactions with their child. The dissatisfactions expressed by parents of visually impaired children in a recent Rand Corporation Study (Brewer and Kakalik, 1979) make it evident that parents must be involved continually in their child's program regardless of whether it is in a public school or residential facility.

Just as we have made advancements in the technological aspects of services for visually impaired individuals, we have also gained a greater awareness of the need to prepare children for their future roles. Career education must stand beside academic preparation in the child's earliest experiences. Much of what we have learned over past years in working with young children has clarified the importance of laying a solid foundation for later skills. By introducing career-related material beginning early in the children's program, we are increasing the opportunities for later vocational success and expanding their awareness of the social world.

Purpose of the Manual

This manual represents a compromise. It attempts to provide direction and support for the educator of visually impaired children without duplicating the many resources already available. For example, several works have been published recently (DuBose, 1979; Safford and Boynton, 1978) which focus on the education of young visually impaired children. Furthermore, Smith and Keen (1979) have edited a volume which gives comprehensive coverage to visual impairments in children. It is not the purpose of this manual to say the same things a different way. When the work began to construct this volume, the intent was to fill in the gaps for practitioners who provide direct services

to visually impaired children. Specifically, we chose to address the needs of children and their teachers at the early childhood level because less attention has been given to this population than to infants and adults. The early childhood years represent the critical period during which cognition and communication are used in problem solving. It is an important time in the life of any child and, particularly, of a visually impaired child.

We look upon this manual more as a working paper than as a finished document. As our knowledge of visual impairments increases, as it must and will, so must our approaches be modified and expanded to translate the knowledge into practice. The basis for our strategies must be scientific. Either through a formal experimental design or through systematic observation in the course of typical activities, the teacher should be able to justify the use of a specific strategy based upon its success with a given child. As you identify these successful strategies, you should add them to your copy of the manual.

In Chapter II, a description is given of some instructional materials which are useful with visually impaired children. While in no way being exhaustive (indeed, materials which are easily accessible through APH are not included), it offers an opportunity to utilize materials with visually impaired children which may have more general use in a school program.

Chapter III provides an annotated review of some of the literature which has helped us to formulate approaches with visually impaired children. It also lists several curriculum guides which have emanated from federally-funded projects.

The final sections of the manual address some areas and issues which we felt were pertinent. We hope that the contents will in some way contribute to the most progressive, creative, and sensitive approach possible with the children in your care, and will produce young adults who are not bound by the potential limitations of a visual impairment.

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SURVEY OF INSTRUCTIONAL MATERIALS

Instructional Materials Listed by Curricular Area

Pre-Readiness Level

My Friends and Me

Peabody Early Experiences Kit

Peabody Language Development Kit (Level P)

Readiness Level

Communication

Early Childhood Enrichment Series: Development of Readiness to Read

The Ginn Basic Reading Program
- Part A: Building Pre-Reading Skills-Language
- Part B: Building Pre-Reading Skills-Consonants

Language for Daily Use

Language Master System

Listen and Think Program

Phonics for Fun

Sound, Write, Read and Spell

Tactual Discrimination Worksheets

Think, Listen and Say Kit

Touch and Tell Books

Math

Ascobloc Geometric Blocks

Early Childhood Enrichment Series: Development of Number Readiness

Geometric Forms

Language Master System

Modern School Mathematics: Structure and Use (Kindergarten)

Daily Living

Developing Understanding of Self and Others (DUSO)

Foods: Your Choice (Level 1)

Health: Decisions for Growth (Level Yellow)

Real People at Work

The World of Mankind

Academic Level

Communication

Reading

ABC's of Braille

Bill Martin's Instant Readers (Level 1, 2, 3)

The Bookmark Libraries

The Bookmark Reading Program

D and W Supportive Reading Skills Series

Expectations

Independent Activities for Beginning Readers

Language Master System

Listen and Think Program

Multiple Skill Series (Levels A, B. C)

My Weekly Reader

Pacesetters for Reading

Reading: Beginnings, Patterns, Explorations

Singer Learning Module (Vowel and Consonant Sounds)

Specific Skill Series (Books A-F)

SRA Reading Laboratory

SRA Listening Language Laboratory Series

SRA Listening Skill Builder Tapes

Troll Read Alongs

Writing

Dolch Word Cards

Language for Daily Use

Phonics for Fun

Sound, Write, Read and Spell

We Learn to Write Series

Academic Level

Communication

Spelling

Sound and Sense in Spelling

Math

Ascob'oc Geometric Blocks

Complete Book of Fingermath

Geometric Forms

Growth in Arithmetic (Levels Red, Blue, and Green)

Growth in Mathematics (Yellow)

Language Master System

Modern School Mathematics Structure and Use (Kindergarten)

Modern School Mathematics Program (Grades 1, 2, 3)

Sequential Mathematics (Beginning Math Concepts)

Singer Learning Module

Ten Spot

Science

Science Far and Near

Daily Living

Developing Understanding of Self and Others (DUSO)

Food: Your Choice (Levels 1 and 2)

Health: Decisions for Growth (Levels 1, 2, 3)

Real People at Work

The World of Mankind

Instructional Materials Listed in Alphabetical Order

Materials: ABC'S OF BRAILLE

Description: ABC'S OF BRAILLE is a simplified introduction to the characters and rules of English braille. It is designed for use with children between the ages of 9 and 12. The vocabulary, structure, and stories are geared to the interests and needs of children in that age group.

Purpose: To test reading readiness for braille students and to introduce braille characters and teach braille rules.

Adaptations: None.

Available From: American Printing House for the Blind (APH)

Materials: ASCOBLOC GEOMETRIC BLOCKS

Description: Geometric shapes with attributes of size, color, shape, and thickness with set ring hoops.

Purpose: To teach set concepts and basic geometry with a hands on approach.

Adaptations: None. Excellent for braille students. Large and easy to handle.

Available From: Mead Corporation

Materials: BILL MARTIN'S INSTANT READERS (LEVEL 1, 2, 3)

Description: 3 sets of 10 taped books for children to follow and read along with the reader.

Purpose: To help children feel successful and to create an appreciation for reading.

Adaptations: Braille stories for braille students to follow as they listen. Some words are not clear in print.

Available From: Holt, Rinehart, & Winston

Materials: THE BOOKMARK LIBRARIES

Description: 3 sets of 12 paperbook books filled with delightful stories and beautiful pictures

Purpose: To provide reading pleasure for students and reinforce the Bookmark Reading Program

Adaptations: Braille stories for braille students. Print is large enough for beginning readers.

Available From: Harcourt Brace Jovanovich

Materials: THE BOOKMARK READING PROGRAM

Description: The Bookmark Reading Program is a complete instructional program that meets the individual needs of children in decoding, comprehension, language study skills, and literature appreciation.

Purpose: To teach reading with a simple teaching strategy that is clear and complete

Adaptations: Textbooks are adapted by APH. Skill sheets can be enlarged or brailled and thermoformed to meet the needs of the children. Objects can be used to develop concepts.

Available From: Harcourt Brace Jovanovich and APH

Materials: THE COMPLETE BOOK OF FINGERMATH

Description: Fingermath is a complete instructional program in arithmetic computation with whole numbers. It teaches a system using the fingers to perform simple and complex arithmetic operations. Fingermath may be used by itself or as a supplement to any basal math program.

Purpose: To teach a functional system of arithmetic computation through sensory techniques

Adaptations: Worksheets may need to be darkened, brailled, or thermoformed according to the needs of students. The teacher may also need to use hand over hand and descriptive techniques.

Available From: McGraw-Hill Book Company

Materials: DEVELOPING UNDERSTANDING OF SELF AND OTHERS (DUSO)

Description: There are two DUSO kits; D1 is appropriate for children in kindergarten and lower primary grades, while D2 is for upper primary and grade four. The programs employ listening to stories, role playing, puppetry, and discussion,as well as other techniques in the daily activities. There are more than enough activities in each program for the entire school year. Each kit is contained in a metal carrying case. D1 DUSO includes a manual, 2 story books, 5 group discussion cards, 33 posters, 8 puppets, 11 puppet props, 33 puppet activity cards, 33 role playing activity cards,and 5 cassettes or 21 records.

D2 DUSO kit also includes manual as well as 33 posters, 8 puppets, 33 discussion pictures, 6 discussion guide cards, 33 puppet activity cards, 33 role playing cards, 8 self and social development activity cards, 33 career awareness activity cards, and 5 cassettes or 17 records. Both kits may be purchased in part or as a whole.

Purpose: Both kits contain programs of materials and activities designed to encourage social and emotional development in young children. The DUSO D1 focuses primarily on helping children understand their feelings and behavior, and be able to recognize and express their feelings openly and appropriately. DUSO D2 is designed to further develop the child's awareness of him/herself as an individual and his/her relationships with others. It encourages the development of good social skills and of a positive attitude about self and others.

Adaptations: Some materials and lessons may be inappropriate or need modification for use with braille students. Most are appropriate for low vision and print students.

Available From: American Guidance Service, Inc.

Materials: D & W SUPPORTIVE READING SKILLS SERIES

Description: This series of booklets develops general and specific reading skills. Each set introduces and provides practice in subskills of eight major skill areas defined by the program (e.g., word groups, multiple meanings, and understanding questions).

Adaptations: None. Available in large print and braille.

Available From: APH or Barnell Loft, Ltd.

Materials:	DOLCH WORD CARDS
Description:	Flashcards containing most commonly used words.
Purpose:	To provide practice in reading the basic sight vocabulary.
Adaptations:	None.
Available From:	APH

Materials:	EARLY CHILDHOOD ENRICHMENT SERIES: DEVELOPMENT OF NUMBER READINESS
Description:	A kit containing various objects for counting and developing other math concepts.
Purpose:	To provide pre-math readiness skills.
Adaptations:	Concrete objects. Braille numeral cards.
Available From:	Milton Bradley

Materials:	EXPECTATIONS
Description:	Magazine for blind children, grades 3-6.
Purpose:	To provide students with literature at their level of interest and reading comprehension.
Adaptations:	None.
Available From:	Braille Institute Press.(Provided free of charge to blind children in Grades 3-6 in the U.S.)

Materials:	FOOD...YOUR CHOICE (LEVELS 1 AND 2)
Description:	A nutrition learning kit with three levels. The first two are geared to early childhood education. The programs at each level are activity-oriented and help children learn to choose food wisely.
Purpose:	To teach good nutritional habits.
Adaptations:	Activities are good for class, but print size is small. Worksheets can be magnified, enlarged, or brailled. Excellent guide.
Available From:	Obtainable only after completion of an inservice course offered through your local National Dairy Council.

Materials: GEOMETRIC FORMS

Description: The basic shapes of circle, square, and triangle presented on a white vacuum formed plastic sheet illustrating special closed curves, three plane figures, and 4 solids.

Purpose: To teach primary grade students with visual handicaps beginning mathematic concepts and operations, particularly geometry concepts relating to curves, figures, and three dimensional solids.

Adaptations: None

Available From: APH

Materials: THE GINN BASIC READING PROGRAM
PART A: BUILDING PRE-READING SKILLS
KIT A - LANGUAGE
PART B: BUILDING PRE-READING SKILLS
KIT B - CONSONANTS

Description: The pre-reading program focuses on oral language, listening, and literature for pre-readers.

Purpose: To prepare non-readers for reading.

Adaptations: None

Available From: Ginn and Company

Materials: GROWTH IN ARITHMETIC (LEVELS RED, BLUE, AND GREEN)

Description: A textbook series of which the workbook component is particularly useful in supporting any math textbook series. The books are colorful with large pictures and print.

Purpose: To reinforce mathematical concepts.

Adaptations: Levels Red and Blue, which contain large print and pictures, require no adaptations. Level Green print size can be used with magnification. Pages can be enlarged by hand or brailled.

Available From: Harcourt Brace Jovanovich

Materials: GROWTH IN MATHEMATICS (YELLOW)

Description: A basic pre-math readiness program.

Purpose: To teach basic math concepts.

Adaptations: Some pages can be brailled and others can be made darker. Concrete objects may be used instead of pictures in the book.

Available From: Harcourt Brace Jovanovich

Materials: HEALTH: DECISIONS FOR GROWTH
As You Grow
You Make Choices
At Your Best
DECISIONS FOR GROWTH FILMSTRIPS

Description: A complete contemporary health program for levels 1-6. The texts for the first three levels are listed above. In addition, there are filmstrips available to accompany each text.

Purpose: To develop skills in and knowledge about all the major health care areas. Attention is given to such current health care problems as environment and drug misuse.

Adaptations: None

Available From: APH & Harcourt Brace Jovanovich

Materials: INDEPENDENT ACTIVITIES FOR BEGINNING READER'S

Description: 300 cards of independent reading activities; transparent overlays - specifically coordinated with Bookmark Reading Program

Purpose: To provide coordinated follow-up learning in reading, including decoding and comprehension exercises.

Adaptations: Use with low vision children only with no modifications.

Available From: Harcourt Brace Jovanovich

Materials: LANGUAGE FOR DAILY USE

Description: A basic language arts program including stories, poems, book reviews, speech projects, writing, and grammar assignments. The opportunity for practice, review, and testing is provided within each text.

Purpose: To teach speaking, listening, reading, and writing skills.

Adaptations: Textbook is in large print and braille. Worksheets must be darkened and thermoformed.

Available From: Harcourt Brace Jovanovich

Materials: LANGUAGE MASTER SYSTEM

Description: Language Master System is learning equipment which employs the student's sight, speech, touch, and hearing in active student instruction. The Language Master System is multi-sensory and self pacing, therefore applicable for use in all curriculum areas and age levels. To use the L.M. unit, the student inserts a card into a slot, watches and listens, records his response and then immediately compares his response to the instructor's.

Purpose: To provide practice in skills being taught in subject areas.

Adaptations: Braille material on card. Excellent for print or braille students. No modifications for print needed. Braille can be added to cards. Teacher-designed cards can be made for any subject matter. Auditory feedback is excellent!

Available From: Bell & Howell

Materials: LISTEN AND THINK PROGRAM

Description: A listening program with 15 taped lessons and activity sheets. (Level A, B & C)

All directions are on the recording. Each lesson is self-contained and is presented in a story format.

Purpose: The program is designed to enhance listening skills and develop critical thinking skills.

Adaptations: None

Available From: McGraw-Hill Book Company and APH

Materials: MODERN SCHOOL MATHEMATICS PROGRAM (GRADES 1, 2, 3)

Description: MSM is a complete mathematics program in textbook format. It teaches the structure of the number system, computation skills, geometry, measurement, and introduces algebra. Worksheets, progress tests, and duplicating masters are available.

Purpose: To teach mathematical skills.

Adaptations: None are needed since text is available from APH. Workbooks, progress tests, and duplicating masters are enlarged by magnification or copying over.

Available From: Houghton-Mifflin Company

Materials: MODERN SCHOOL MATHEMATICS STRUCTURE AND USE (KINDERGARTEN)

Description: A math program for the readiness level to reinforce and develop mathematical experiences.

Purpose: To teach simple mathematical concepts, language, and symbolism.

Adaptations: Worksheets are darkened for low vision pupils. Some worksheets are brailled. Concrete objects may be used to teach some concepts for both the low vision student and the braille child.

Available From: Houghton-Mifflin Company or APH

Materials: MULTIPLE SKILLS SERIES (LEVELS A, B, C)

Description: A set of four booklets on each level which contain 25-50 units. Multiple choice questions follow each short reading selection.

Purpose: A nonconsumable reading program for developing several skills such as main ideas, stated details, inference, picture clues, and vocabulary.

Adaptations: None

Available From: APH and Barnell Loft

Materials: MY FRIENDS AND ME

Description: A complete kit of materials which can be used for 190 group activities for preschool children. The kit includes an activity board and metal carrying case containing two stuffed dolls, 2 story books, 2 activity manuals, activity pictures, magnetic shapes, song cards, cassettes or records, pens, erasers, and a print set.

Purpose: To provide a balanced program of activities designed to promote development of personal identity and social skills in preschool age children.

Adaptations: None - the low vision students may use the visual aids and describe the pictures to the braille students, who can enjoy the stories, songs, and tapes.

Available From: American Guidance Service, Inc.

Materials: MY WEEKLY READER

Description: A weekly newspaper for children.

Purpose: To stimulate interest in reading and current events.

Adaptations: None for braille students. Print students may need magnification.

Available From: APH (braille version)
Xerox Education Publications (print version)

Materials: PACESETTERS FOR READING

Description: Twenty-two tapes and supplementary guide which are designed to introduce phonic skills.

Purpose: To teach phonic skills.

Adaptations: None

Available From: Troll Associates

Materials: PEABODY EARLY EXPERIENCES KIT (PEEK)

Description: The PEEK consists of a variety of materials most of which are housed in two large plastic cases. The materials in the cases are as follows: teacher's guide, 2 lesson manuals, 4 puppets, 186 rubber shapes beads, 4 cloth bags, 2 cloth balls, a magnetic fishing poles, rubber stamp, 335 photo pictures, 232 shapes, pictures, 8 posters, 30 small objects, sound makers, template folder, 18 story cards, 80 story pictures. 6 small card decks, 13 rope sections, 27 song cards, and song and sound recordings.

In addition an easel and pouch are included in the kit.

Purpose: To provide a complete program including lessons and materials which may be used in part or in its entirety to promote social, emotional, cognitive, and language development in preschool children (ages 2½-4 yrs.)

Adaptations: Some activities may be inappropriate or need modification for use with braille students. Most materials and activities would be appropriate for low vision and print students.

Available From: American Guidance Service, Inc.

Materials: PEABODY LANGUAGE DEVELOPMENT KITS (LEVEL P)

Description: There are four levels of the PLDK and level P is appropriate for children with mental ages of 3-5 years. The materials found in the kit are contained in two metal cases. Each of the following materials may be ordered separately or as part of the complete kit: manual, 393 Object Picture cards, 20 family and home cards, visual closure templates, 6 story posters, ten records of songs and stories, a xylophone, 6 music cards, 3 puppets, 21 life size fruits and vegetables, cloth bag, pointing stick, 2 mannikins with vinyl clothing, disassembled manikin magnetic geometric shapes and strips, and 240 plastic chips.

Purpose: PLDK is designed as a complete program designed to stimulate the development of oral language and cognition in preschool children. It contains 180 daily lessons and may be used as a total language program or in part as a supplement to a language development kit.

Adaptations: Some lessons and activities may be inappropriate or need modification for use with braille students. Most are appropriate for low vision or print students, however.

Available From: American Guidance Service

Materials: PHONICS FOR FUN

Description: A book for braille students with exercises using an excellent list of frequently confused braille symbols.

Purpose: To provide braille students additional drill on braille signs and rules.

Adaptations: None

Available From: APH

Materials: READING: BEGINNING/PATTERNS/EXPLORATIONS (READING BOOKSHOPS)

Description: Set of reading books for grades 1-3.

Purpose: Independent Reading

Adaptations: None

Available From: APH (in Vacuum Form Catalog)

Materials: REAL PEOPLE AT WORK

Description: The Educational Research Council of America Career Development Program (ERCA) is designed to orient youngsters toward productive activity in four steps: Career Awareness (K-6), Career Exploration and Discovery (Grades 7-9), Career Evaluation (Grade 10), and Career Preparation (Grades 11, 12, and beyond). After twelve years of participation in the program, young people should be prepared to: enter a field of work, continue in a technical education or apprentice training program, or continue preparation for a professional career.

Purpose: Career development is devoted to helping young people prepare themselves for the world of work - the world of productive, profitable activity that they will enter when they complete their schooling.

Adaptations: Booklets may be brailled.

Available From: Educational Research Council of America

Materials: SCIENCE FAR AND NEAR

Description: A science textbook for Grade 3.

Purpose: To teach basic science concepts in a sequential order.

Adaptations: A standard type book is available for large print students. Much interpretation and describing needed for braille students. Many hands-on activities and models are recommended.

Available From: D.C. Health & Co. and APH

Materials: SENSORY STIMULATION KIT

Description: This large kit includes dozens of materials that are designed to facilitate the development of basic sensory processes in young blind children with particular application for the multihandicapped, visually impaired child. Materials are nicely packaged, but many are expendable and must be replaced periodically.

Purpose: To offer a variety of materials to stimulate visual skills and other sensorimotor skills in the young and visually impaired child.

Adaptations: The materials are geared specifically for the visually impaired child.

Available From: APH

Materials: SEQUENTIAL MATHEMATICS
Addition and Subtraction (BOOK 1)
Multiplication and Division (BOOK 2)

Description: A diagnostic-prescriptive mathematical program designed for special education students.

Purpose: To teach basic computational skills to children who may have perceptual difficulties, problems with organizational and symbol reading, and with writing skills.

Adaptations: Book is printed in large type. It has been brailled and thermoformed by volunteers.

Available From: Harcourt Brace Jovanovich

Materials: SINGER LEARNING MODULE: BEGINNING MATH CONCEPTS

Description: The kit contains 12 sound filmstrips, 24 cassette/response card lessons, 135 miniprints, 1 floor game, 2 game boards, 40 triangular shaped flash cards, 30 number lines, 4 geometric shape inlay forms, 56 fractional parts, and 30 student evaluation books.

Purpose: A primary level multimedia math program which can be used with any regular math program for teaching and reviewing basic math concepts.

Adaptations: None. Braille students listen while print students watch and listen.

Available From: Society for Visual Education

Materials: SINGER LEARNING MODULES: VOWEL AND CONSONANT SOUNDS

Description: Tapes, filmstrips, games and picture, and alphabet cards.

Purpose: To teach auditory and visual recognition of consonant and vowel sounds.

Adaptations: None - low vision children enjoy visual aids and the braille students enjoy tapes.

Available From: Society for Visual Education

Materials: SOUND AND SENSE IN SPELLING, 2nd EDITION

Description: SOUND AND SENSE IN SPELLING is a program for grades 1 through 8 that appeals directly to the understanding of the learner by presenting principles and providing for their application. It makes clear the nature of the written language and shows how letters are used to symbolize the sounds of the spoken word. It emphasizes the particular sound-symbol relationship and spelling generalizations.

Purpose: To teach sound-symbol relationship and generalizations in spelling.

Adaptations: First grade lessons may be brailled.

Available From: Harcourt Brace Jovanovich (First grade)
APH (2-8 grades, large print and braille)

Materials: SOUND, WRITE, READ AND SPELL (SPECIAL EDUCATION SERIES)

Description: A book of spirit masters to help the low vision child sound, read, and write letters and words. The print is large.

Purpose: To teach letters, sounds, and words and help children follow directions.

Adaptations: None (use with print students only).

Available From: Hayes School Publishing Co., Inc.

Materials: SPECIFIC SKILL SERIES (BOOKS A-F)

Description: A series of specific skill booklets that can be used to teach or reinforce skills in reading.

Purpose: To give a child specific reinforcement in basic reading skills.

Adaptations: Available in large print and braille.

Available From: APH or Burnell Loft, Ltd.

Materials: SRA LISTENING LANGUAGE LABORATORY SERIES: 1975 EDITION OF KITS (GRADES 1, 2, 3)

Description: Each program of 48 lessons has 24 tape cassettes, 48 activities, page spirit masters, and 1 Teacher's Handbook.

Purpose: To develop language and listening skills through the presentation of language and word concepts.

Adaptations: No modifications necessary for those students who can see the spirit master sheets. Lessons can be directed by the teacher since the handbook contains comprehensive questions.

Available From: Science Research Associates, Inc.

Materials: SRA LISTENING SKILL BUILDER TAPES

Description: Two audiocassettes and a booklet.

Purpose: To develop comprehension and listening skills.

Adaptations: Little or none for print students. Braille students would need record book put into braille.

Available From: Science Research Associates, Inc.

Materials: SRA READING LABORATORY (1973 EDITION WITH LARGE PRINT)

Description: The kit contains individual booklets for students, a teacher's handbook, and a specimen set.

Purpose: To individualize reading and reinforce universal skills, the selections develop basic comprehension, vocabulary, and word attack skills.

Adaptations: The kit is available in large print from APH. A braille edition is forthcoming.

Available From: APH in large print and braille and also from Science Research Associates, Inc.

Materials: TACTUAL AIDS FOR READING

Description: A collection of objects in sturdy cardboard units, each containing 4 removable drawers.

Purpose: To use objects to teach visually handicapped children to read. To stimulate interest in the environment, to develop tactual discrimination, to teach phonics skills, and to replace materials in ink-print text which are tactual.

Available From: APH

Materials: TACTUAL DISCRIMINATION WORKSHEETS

Description: The tactual discrimination worksheets are consumable paper sheets on which geometric and other punctographic forms are embossed. The set of worksheets is composed of four parts: Part I - Geometric shapes; Part II - Lines; Part III - Angular lines, and; Part IV - The Braille Code.

Purpose: To provide potential braille readers with practice in making simple tactual discriminations independently.

Adaptations: None (For braille students only)

Available From: APH

Materials: TEN SPOTS (A MATH GAME)

Description: Ten spot is a math board game with braille and large print.

Purpose: It provides practice with addition and subtraction skills, as well as use of the abacus.

Adaptations: None.

Available From: APH

Materials: THINK, LISTEN, AND SAY KIT

Description: THINK, LISTEN, AND SAY KIT includes: 8 filmstrips, 4 tapes, teacher's manual, individual student activity books, and sequence story cards.

This filmstrip series with accompanying records and student work materials assists the teacher in improving auditory discrimination, aural comprehension, and visual perception.

Purpose: To improve listening skills in the following students: Preschool and primary level, culturally disadvantaged, mentally retarded and slow learning, hard of hearing, blind and visually handicapped.

Adaptations: Braille student activity sheets.

Available From: Eye Gate House

Materials: TOUCH AND TELL BOOKS

Description: A set of three volumes of raised dot pages to help a beginning student become accustomed to braille.

Purpose: To teach a beginning student the mechanics of braille reading through tactual sensitivity.

Adaptations: For braille users only.

Available From: APH

Materials: TROLL READ ALONGS

Description: Ten color picture storybooks with accompanying tapes.

Purpose: To develop listening and oral comprehension skills.

Adaptations: None. The print is good and can be read by some students. Braille students enjoy listening to the stories. Non-readers enjoy listening while looking at the pictures.

Available From: Troll Associates

Materials: WE LEARN TO WRITE SERIES

Description: This contains letters, words, and sentences for children to copy. It also introduces cursive writing.

Purpose: To provide practice in writing so that children may become proficient in written communication.

Adaptations: Some of the sentences must be enlarged for the children with low vision.

Available From: The A. N. Palmer Company

Materials: THE WORLD OF MANKIND

Description: A series of social studies textbooks, the first three of which are appropriate for early childhood education (grades 1-4). They are: People in Our World, The Groups We Belong To, The Communities We Build. Teachers' editions available for each text. Reinforcement Activities and Process Evaluation Inventories (tests) are also available.

Purpose: To teach social studies.

Adaptations: The text is very visual at these levels but requires a great deal of verbal information from the teacher.

Available From: APH and Follett Publishing Co.

Distributors of Instructional Materials

American Guidance Service, Inc.
Publisher's Building
Circle Pines, MN 55014

American Printing House for the Blind
1839 Frankfort Avenue
P.O. Box 6089
Louisville, KY 30206

Barnell Loft, Ltd.
958 Church Street
Baldwin, NY 11510

Braille Institute Press
Braille Institute of America, Inc.
741 North Vermont Avenue
Los Angeles, CA 90029

D. C. Heath and Company
125 Spring Street
Lexington, MA 02173

Educational Research Council of America
Rockefeller Building
614 W. Superior
Cleveland, OH 44113

Eye Gate House
Jamaica, NY 11435

Follett Publishing Company
1010 W. Washington Blvd.
Chicago, IL 60607

Ginn and Company
Statler Building
P.O. Box 191
Boston, MA 02117

Harcourt Brace Jovanovich
757 Third Ave.
New York, NY 10017
or
1372 Peachtree Street, N.E.
Atlanta, Georgia 30309

Hayes School Publishing Co.
Wilkinsburg, PA 15221

Holt, Rinehart, & Winston
383 Madison Avenue
New York, NY 10017

Houghton Mifflin Company
666 Miami Circle, N.E.
Atlanta, GA 30324

McGraw-Hill Book Company
1221 Avenue of the Americas
New York, NY 10020

Mead Corporation
1391 Chattahoochee Avenue, N.W.
Atlanta, GA 30318

Milton Bradley Company
Springfield, Mass. 01101

The A.N. Palmer Co.
Schaumburg, Il 60194

Science Research Associates, Inc.
259 East Erie Street
Chicago, IL 60611

Society for Visual Education
1345 Diversey Parkway
Chicago, IL 60614

Troll Associates
320 Rt. 17
Mahwah, NJ 07430

Xerox Education Publications
245 Long Hill Road
Middletown, CT 06457

Additional Sources of Catalogs and Aids

1. American Foundation for the Blind
   Consumer Products Department
   15 West 16th Street
   New York, NY 10011

2. American Thermoform Corp.
   8640 E. Slauson Ave.
   Pico Rivera, CA 90660

   Produces Thermoform machine and supplies.

3. Developmental Learning Materials
   7440 Natchez Avenue
   Niles, Illinois 60648

   Catalog has good visual preception, gross motor, and fine motor materials.

4. Library Reproduction Service
   The Microfilm Company of California, Inc.
   1977 South Los Angeles Street
   Los Angeles, California 90011

   Reproduces textbooks, manuals, tests and instructional materials for visually handicapped students in several different large type sizes.

5. National Library Service for the Blind and Physically Handicapped
   Library of Congress
   Washington, D.C. 20542

   Provides books and magazines on cassette, disc, and braille loan program. Also lends record and cassette players.

6. Science for the Blind Products
   Box 385
   Wayne, PA 19087 (215) 687-3731

   Catalog of aids and materials for blind including: cassette recorders, magnifiers, scratch and sniffs, recreation equipment, toys, games and puzzles, gifts and novelties, and special instruments and tools.

7. Special Resources Materials Catalog
   Modern Education Corporation
   P.O. Box 721
   Tulsa, Oklahoma 74101

   Educational materials catalog with several items good for V.I. students, especially for low vision training, writing, and photo resources.

8. Telesensory Systems, Inc.
   3408 Hillview Avenue
   P.O. Box 10099
   Palo Alto, CA 94304 (415) 493-2626

   Manufactures Optacon, Speech Plus calculator, and other electronic aids for the visually impaired.

9. The Vital Years (a catalogue)
   Educational Teaching Aids
   159 West Kinzie Street
   Chicago, IL 60610 (312) 644-9438

   Educational materials catalog with numerous materials requiring little or no adaptations for visually impaired students.

Selected Review of the Literature

The following is a selected review of the literature of the past decade. It is by no means intended as an exhaustive list, but is presented as a selection highlighting some of the major works in the field.

Alber, M. & Bernadette, E. Listening: A curriculum guide for the teachers of visually impaired students. Springfield, IL: Illinois State Office of Education, ATI. (ERIC Document Reproduction Source No.: ED140532).

This document is a curriculum guide for developing listening skills in children with visual impairments. Skills are arranged hierarchically and are described both in terms of long-range goals and short-term objectives. Means for determining a child's level of placement along the skill continuum are provided, as well as specific developmental activities for teaching the skill. A bibliography of resources is also included. The listening areas addressed are auditory reception, auditory discrimination, auditory memory, auditory sequential memory and closure, auditory association, and auditory comprehension.

Bailey, L. A teacher's handbook on career development for children with special needs: K-6. Springfield, IL: Illinois State Office of Education, 1973. (ERIC Document Reproduction Service No. ED128993).

This document describes a project which was conducted in Illinois for the purpose of developing a program of career education for children with sensory and physical handicaps in grades K-6. The handbook is designed to help teachers develop competencies in planning, organizing, and conducting career education learning centers. It examines the then current state of career education, the purpose, goals, and objectives of career education for children in grade school, and the characteristics of children with special needs, including the implications with regard to career education. There are sections on Career Education Resources and the role of parents in career education. The curriculum planning section demonstrates how career education materials can be used with specific career education goals and objectives to plan and develop instructional lessons and units. The appendices include sample forms and lesson plans.

Baird, A. Potential application of pathsounder, laser cane and sonic guard as aids to concept development in blind children. Journal of Visual Impairment and Blindness, 1977, 71 (3), 97-101.

The pathsounder, laser cane, and sonic guard are described. Their potential, with proper adaptations, to help blind children bridge some of the developmental gaps found in this population is discussed.

Ballou, M. Sex education and family life curriculum. Watertown, MA: Perkins School for the Blind, 1977. (ERIC Document Reproduction Service No. ED141963).

This guide is a comprehensive sex education and family life curriculum for children in grades K-12. It addresses eight themes: self and others, masculine and feminine, development, sexuality, life styles, relationships, feelings, and medical services. Curriculum units are developmentally sequenced into five levels relative to physical and chronological growth (i.e., early childhood, middle childhood, prepuberty, puberty and, adolescence), as well as five learning levels (preprimary, primary, intermediate, junior high, and high school). Each theme, therefore, is presented with regard to the specific physical and learning needs of children.

Barraga, N., Dorward, B. and Ford, P. Aids for teaching basic concepts of sensory development. Louisville, KY: American Printing House for the Blind, 1973. (ERIC Document Reproduction Service No. ED083771).

This guide contains instructions for using and constructing fifty-eight instructional materials for use with visually impaired young children to develop their basic sensory concepts. Hand skills such as handling, placing, putting together, arranging, fitting, pushing, pulling, assembling, and maneuvering are developed through use of these materials. In addition to directions for use and construction of the aids, other subjects such as teaching sequence and obtaining commercial materials are discussed. There are eleven materials relating to form, nine to position, eleven to size comparisons, five to texture, nine to similar and different shapes, four to number, and nine to enrichment of basic concepts.

Bell, V. An educators approach to assessing preschool visually handicapped children. Education of the Visually Handicapped, 1975, 7 (3), 84-89.

In this article, the author states that assessment of preschool children with visual handicaps should be ongoing and comprehensive. The purposes for assessment are

1) Determination of the child's present level of development;
2) Recommendation for present services based on strengths and weaknesses;
3) Referral for services for additional handicaps;
4) Recommendation for appropriate placement;
5) Indication of future placement, and;
6) Continuous monitoring of development.

The author then discusses the differences between formal and informal assessment. She recommends the following instruments for use in formal assessment:

A Social Maturity Scale for Blind Preschool Children (Maxfield and Buchholz, 1957)
Preschool Attainment Record (PAR - Fall, 1966)
Denver Developmental Screening Test (Frankenberg, 1967)
Haeussermann Developmental Potential of Preschool Children (1958)
Psychoeducational Evaluation of the Preschool Child (Jedrys, et. al., 1972).
Gesell Schedules (1940, 1947)

Observation and parent interview methods are discussed as a means of informal assessment. The author also briefly mentions a scale, which she developed and which is available for use by teachers. Finally, the importance of using other professionals in the evaluation process is brought out. In summary, the author reviews the importance of assessment and methods of conducting meaningful assessment.

Best, J. The relevancy of normalcy. Education of the Visually Handicapped, 1978, 8 (4), 115-119.

In this article, the author stresses the importance of emphasizing knowledge and skills which will help students with visual impairments fit into the real world. Teaching for the development of skills in the following areas is recommended: orientation and mobility, self-help, socialization, interpersonal relationships, sexuality, and real life experiences.

Berla, E., Butterfield, L. Teachers' views on tactile maps for blind students: Problems and needs. Education of the Visually Handicapped, 1975, 7 (4), 116-118.

This article reports the results of a questionnaire which was sent to teachers of blind students in 1974. Conceptual and experiential prerequisites to map reading based on the opinion of those teachers responding to the survey are discussed. In addition, specific problems with map reading materials, such as out of date braille atlases, are reviewed. Finally, specific needs revealed by the survey are stated in terms of proposals for materials (e.g., a kit with which to make maps).

Burns, S. Review of the literature on braille reading. New Outlook for the Blind, 1976, 70 (9), 342-347.

Buchanan, D. Nonverbal communication for the congenitally blind: A review. Journal of Visual Impairments and Blindness, 1978, 72 (3), 81-84.

In this article, the author states that there is a marked lack of data on effective procedures for teaching nonverbal communication skills. It is recommended that this potentially important but neglected area be explored.

Caton, H. and Bradley, E. A new approach to beginning braille reading. Education of the Visually Handicapped, 1978, 10 (3), 66-71.

This article describes a New Beginning Braille Reading Series. The series design will minimize problems that are encountered by beginning braille readers. The series consists of a transition reader (which is basically a reading readiness text), and pre-primer, first, second, and third readers. After completing this series, a braille reader can be successful in any fourth grade basal reading series that has been transcribed into braille.

Curry, R. Using LEA to teach blind children to read. Reading Teacher, 1975, 29 (3), 272-279.

In this article, The Learning Experience Approach is discussed as a superior method for teaching reading to the blind.

Daugherty, K. Listening skills: A review of the literature. New Outlook for the Blind, 1974, 68 (8), 363-369.

Daugherty, K. Monterey Learning Systems: Improving the academic achievement of visually impaired learners. Journal of Visual Impairment and Blindness, 1977, 71 (7), 298-301.

This article examines the use of the Monterey Learning System Reading and Math programs and training procedures which combine visual and auditory skills in an effort to enhance the academic achievement of 29 visually impaired print readers.

DeLucchi, L., Malone, L. and Thier, H. Science activities for the visually impaired: Developing a model. Exceptional Children, 1980, 46 (4), 287-288.

This article briefly describes a project being conducted at the University of California, Berkeley, called Science Activities for the Visually Impaired (SAVI). It is a series of learning modules designed to introduce visually impaired children between the ages of nine and twelve to physical and life sciences in a multi-sensory, hands-on way. Of nine proposed modules, seven have been completed and they are titled as follows: Structures of Life, Scientific Reasoning, Communication, Environments, Mixtures and Solutions, Environmental Energy, and Measurement. The authors state that SAVI activities do as much to enhance social growth as to enhance development on academic and living skills.

Dickstein, C. Mobility for the blind child. Exceptional Parent, 1976, 6 (2), 24-27.

This article discusses the role of the parent in mobility training.

Efron, M. Use of low vision aids to supplement large print materials. Paper presented at the 53rd Biennial Conference of the Association of the Visually Handicapped, Columbia, SC, 1976.

The Visolett, manufactured by the Sedlinger Optical Glassworks in Berlin, West Germany, was researched for the purpose of finding an aid that would be useful to teachers and persons where large print materials were not available. The study revealed that students did read as well with the use of a Visolett. The Visolett has a 1.7 magnification and is used while it lies flush on the reading material. Manufactured in various diameters, the 39 mm lens is the most commonly used model. It is aspheric in design and has edge to edge clarity. It has the advantages of amplifying in existing light and is small enough to be carried in a pocket or purse.

Ethridge, E. A new approach to career development for visually impaired students on the elementary level. Education for the Visually Impaired, 1978, 10 (3), 87-91.

This article points up the need to inform visually impaired elementary students of career choices at an early age. Units in foods, construction, hand tools, entertainment projects, and exposure to career choices is a valuable asset in planning future careers.

Fitzgerald, J. Demonstration of activities designed to promote cognitive growth. Paper presented at the annual international convention, The Council for Exceptional Children, Atlanta, Georgia, April 11-15, 1977. (ERIC Document Reproduction Service No. ED140585).

This paper is about the development and implementation of a learning sequence designed to teach necessary prerequisite skills for conserving length. The sequence of six activities entitled The Long and Short of It was developed for a nine-year-old blind child participating in the Cognitive Research Project.

Franks, F. Educational materials development in primary science: An introductory science laboratory for young blind students. Education of the Visually Handicapped, 1975, 7 (4), 97-101.

The purpose of this article is to describe an operational construct for the development of educational aids for use with children with visual handicaps in the primary science classroom. The author states that, over the years, primary science curricula have begun to introduce basic science concepts earlier in the lower grades. As this occurs, texts have become increasingly visual and are not lending themselves to translation or to braille. In addition, concept related activities are used to teach and there are very few aids for blind children to use.

The author describes in detail the format for identification, classification, development, production, and evaluation of educational aids.

This article is the first in a series of six. The five subsequent articles describe five specific science education aids which were developed. The articles are listed below.

1. Franks, F. and Hull, R. Educational materials development in primary science: The pull apart cell. Education of the Visually Handicapped 1976, 8 (1), 16-20.
2. Franks, F. and Huff, R. Education materials development in primary science: Insect identification kit. Education of the Visually 1976, 8 (2), 57-62.
3. Franks, F. and Huff, R. Educational materials development in primary science: Dial thermometer instructional unit. Education of the Visually Handicapped, 1977, 8 (4), 120-124.
4. Franks, F. and Huff, R. Educational materials development in primary science: Linear measurement unit for young blind students. Education of the Visually Handicapped, 1977, 9 (1), 23-28.
5. Franks, F. and Butterfield, L. Educational materials development in primary science: Simple machines. Education of the Visually Handicapped, 1977, 9 (2), 51-55.

Friedman, G. Distance low vision aids for primary level school children. New Outlook for the Blind, 1976, 70 (9), 376-379.

The use of distance LVAs with 5-13 year olds as a means of increasing social and academic achievement in school is discussed. Use of the aids reportedly enhances proficiency in boardwork, observation of demonstrations, viewing movies and slides, field trips, map reading, activities with peers, and orientation and mobility. The author stresses that use of the aid requires close cooperation between the teacher and prescribing doctor

Friedman, J. and Pasnak, R. Accelerated acquisition of classification skills by blind children. Developmental Psychology, 1973, 9 (3), 333-337.

The article describes a study in which the effectiveness of a general enrichment program was compared to the effectiveness of a 120 problem learning set for teaching classification skills. The programs were used with matched groups of blind children. The learning set facilitated more rapid acquisition of skills.

Fulker, M. and Fulker, W. Techniques with tangibles: A manual for teaching the blind. Springfield, IL: Charles C. Thomas, 1968.

An excellent manual for guiding one in making tangible devices for blind children: thermoform masters, handmade apparatus and models, toy models, cutaways, and adapted commercial products.

Goldie, D. Use of the C-5 laser cane by school age children. Journal of Visual Impairment and Blindness, 1977, 71 (8), 346-348.

A discussion of the use of the C-5 laser cane by four blind students attending public school.

Gottesman, M. Conservation development in blind children. Child Development, 1973, 94 (4), 824-827.

In this study, the conservation development of congenitally blind, blindfolded and sighted elementary school children was compared. Results indicated that the order of acquisition of the various types of conservation remains constant across groups.

Hadary, D. Picking up good vibrations from science for the handicapped. Science Teacher, 1975, 42 (10), 12-13.

In this article, the author describes two science programs which were developed for visually impaired and handicapped children. The first is a four year science curriculum for elementary school children and the other is an Enrichment Science Lab for secondary students.

Hadary, D. Science and art for visually handicapped children. Journal of Visual Impairment and Blindness, 1977, 71 (5), 203-209.

This article presents the design, adaptations, and evaluation of a four year program in laboratory science, music, and art for elementary school children with visual impairments.

Hanninen, K.A. The influence of preference of texture on accuracy of tactile discrimination. Education of the Visually Handicapped, 1977, 8 (2), 44-52.

This article is about a study of 29 sighted and twenty-two blind students of normal intelligence in public school classes grades 3-12. The purpose was to determine whether handedness, sex, or grade level predicted preferences for textures and whether the preferences effected accuracy of tactile discrimination. Ten different textures were presented with variation in length of material the feature to be discriminated. Grade level was found to be the only characteristic predicting textural preference. Textural preference, as well as grade level, were found to influence accuracy of discrimination. Burlap, synthetic fur, and velvet cloth were the preferred materials.

Harley, R. and others. The development of a program in orientation and mobility for multiply impaired blind children, Final report. Nashville, TN: George Peabody College for Teachers, 1977. (ERIC Document Reproduction Service No. ED133986.)

This paper is a description of a project designed to develop evaluation scales and programmed instruction for use by classroom teachers in basic training for intellectually impaired blind children. Based on the Peabody Mobility Scale, the project examines six basic orientation and mobility skills including sighted guides, sitting, trailing, turning and maintaining orientation, utilization of discriminable landmarks, and environmental travel. Motor skills, sensory skills, concept development, and orientation and mobility skills were determined to be the four components of prerequisite skill domains. The evaluation scales and programmed instruction materials are based on these four basic areas and are the result of the field testing and discrimination activities.

Hull, W. and McCarthy, D. Supplementary program for preschool visually handicapped children: Utilization of vision/increased readiness. Education of the Visually Handicapped, 1973, 5 (4), 97-104.

This article describes a preschool program at Boston College geared to the development of maximum use of residual vision and readiness for academic tasks. The program was a support for placement of children in regular community-based preschools.

Jones, P. Notes on numeration: Arithmetic on a checkerboard numerals for the blind. School Science and Mathematics, 1978, 78 (6), 481-488.

A historical discussion of computational devices that use checkerboards is presented in this article. The works of Napier, Mento, and Saunderson are discussed.

Kaschner, S. Viewing the earth with closed eyes. Science Activities, 1978, 15 (3), 12-13.

This article examines a multisensory approach to teaching earth science to children with visual impairments. Hands on activities for soil type identification, stream table erosion, and relief map activities are described.

Kershman, S. A hierarchy of tasks in the development of tactile discrimination, Part 1. Education of the Visually Handicapped, 1977, 8 (3), 73-82.

In this study, the author attempts to identify the prerequisite behaviors of one component of the task of reading braille, that is, the hierarchy of tasks in developing tactile discrimination. The purpose of the study was to validate a hypothesized order of tactile discrimination tasks and to determine at what grade levels most students are able to perform the tasks. Sixty blind students in kindergarten, first, and second grades were presented with the tasks.

The task was to find "the one that was not the same". The progression of discrimination was demonstrated to be:

1. Large solid geometric shapes;
2. Flat (puzzle) figures smaller than above;
3. Embossed dot geometric figures;
4. Embossed dot line figures;
5. Braille figures.

Kershman, S. A hierarchy of tasks in the development of tactile discrimination, Part 2. Education of the Visually Handicapped, 1977, 8 (4), 107-115.

This is the second of two articles validating the author's hypothesized hierarchy of the development of tactile discrimination. This article is about the progression of tasks toward tactile discrimination skills for using the Optacon. The discrimination hierarchy is as follows:

1. Large, solid geometric shapes;
2. Flat (puzzle) figures smaller than above;
3. Raised line geometric figures smaller than those in #2;
4. Emobssed line segments;
5. Inkprint figures presented on Optacon.

According to the study, the discrimination tasks were within the capabilities of children in second grade and many were within the capabilities of first graders, as well.

Kojima, T. The Japanese abacus: Its use and theory. Rutland, Vermont: Charles E. Tuttle Co., 1972.

An excellent book to be used as a guide for those interested in knowing the theory and use of the Japanese abacus. Selected exercises are prescribed in order to learn the processes of abacus computations.

Lansdown, R. Partial sight - partial achievement? Special Education - Forward Trends, 1975, 2 (2), 11-13.

This article describes a study comparing the achievement of 30 partially sighted and 30 control group children, ages six to ten on tests of shape and letter recognition, visual perception, visual motor skill, spelling, reading accuracy, and comprehension.

Linn, M. and Thier, H. Adapting science materials for the blind: Expectation for student outcome. Science Education, 1975, 59 (2), 237-246.

This article examines whether concrete experience with objects will, in fact, foster logical development in blind children. The program of Adapting Science Materials for the Blind (ASMB), which was successful in bringing significant gains to learner groups, is discussed.

Lowenfeld, B. (Ed.) The visually handicapped child in school. New York: The John Day Company, 1973.

Chapters of this book are written by acknowledged experts in the field of education for the visually handicapped. Topics covered are history of visually handicapped children, psychological considerations, developmental needs, psychological and educational assessment, sensory-perceptual utilization, educational programs, communication, subject adjustments and skills, life adjustments, multihandicapped children, and teacher preparations.

Lowenfeld, B., Abel, G., and Hatlen, P. Blind children learn to read. Springfield, Illinois: Charles C. Thomas, 1969.

The majority of the book is a report of a study supported by the United States Office of Education. Also, the history of braille and a review of the literature on braille reading is given. Suggestions for reading readiness in braille reading is dealt with and should provide those teaching braille reading much needed information and assistance.

Mangold, S. Tactile perception and braille letter recognition: Effects of developmental teaching. Journal of Visual Impairment, 1978, 72 (7), 259-266.

This study examines the use of a developmental program of tactile perception and braille reading with thirty blind braille users, ages five to fifteen. The purpose of the investigation was to determine if the training affected the rate of error in braille reading, specifically scrubbing and backtracking behaviors.

McIntyre, M. Early childhood and science: Science is for all children. Science and Children, 1976, 13 (6), 50-51.

The author articulates some ways in which science concepts are involved in the experiences and activities of preschool children. She emphasizes the importance of hands on exploration and also the knowledge that the teacher must have about child development and science in order to facilitate development.

Millar, S. Spatial relationships by blind and sighted children. Journal of Experimental Child Psychology, 1976, 21 (3), 460-479.

This article examines the ways in which children represent haptic information in memory and how the primary modality of previous experience affects this information.

Mosley, P. Visually handicapped young children: An early intervention study. Lafayette, LA: Lafayette Parish School Board, 1974. (ERIC Document Reproduction Service No. ED122577.)

This curriculum guide was developed out of efforts to prepare twelve preschool-age children with visual impairments for mainstreaming into public schools by age six. It includes an introduction, a review of the literature, behavioral objectives for children, and process objecitves (i.e., suggested activities which would provide an opportunity for the development of a skill). There are five areas of skill development in the guide including reading readiness, development of residual vision, orientation and mobility, social skills, and daily living skills.

O'Brien, R. Early childhood services for visually impaired children: A model program. New Outlook for the Blind, 1975, 69 (5), 201-206.

This article describes the Montgomery County (MD) demonstration project for preschool children with visual impairments. The manual Alive... Aware... A Person is one of the dissemination materials generated out of this project.

Olson, M. Faster braille reading: Preparation at the reading readiness level. New Outlook for the Blind, 1976, 70 (8), 341-343.

The article discusses six skills related to more efficient braille reading, which should be taught at the readiness level for maximum benefit. Activities for the development of each skill are described.

Olson, M. Teaching faster braille reading in the primary grades. Journal of Visual Impairment and Blindness, 1977, 71 (3), 122-124.

In this article, the author identifies twelve rapid reading principles. Their use by itinerant and resource teachers of beginning braille readers is described.

Psathas, G. Mobility, orientation and navigation: Conceptual and theoretical considerations. New Outlook for the Blind, 1976, 70 (9), 385-391.

In this article, the specific activities and knowledge required by mobility, orientation, and navigation are analyzed. Mobility is the movement of an embodied person. Orientation involves knowing what are important objects and places in the world and knowing where ones relationship to them whether moving or fixed. Navigation is movement directed from one point to another by constructing and following a route.

Santin, S. and Simmons, J. Problems in the construction of reality in congenitally blind children. Journal of Visual Impairment and Blindness, 1977, 71 (10), 425-429.

This article describes the development of blind children from birth and how this development affects and is affected by these children's unique conception of reality. The authors examine sensory, cognitive, affective, and language development in relation to the blind child's construction of reality. The affect that the environment, family, and other people have on the child is also addressed.

Schatz, D. and Thier, H. Increasing the accessibility of hands on science for the blind. New Outlook for the Blind, 1976, 70 (2), 61-63.

This article describes the Adapting Science Materials for the Blind (ASMB) program, wherein elementary school visually impaired students work independently or in small groups with selected materials designed to aid their grasp of scientific principles and the basics of scientific method.

Schlitz, C. (Ed.) A curriculum guide for the development of body and sensory awareness for the visually impaired. Springfield, Illinois: Illinois State Office of the Superintendent of Public Instruction, 1974. (ERIC Document Reproduction Service No. ED111154.)

This curriculum guide was developed to help classroom teachers teach basic skills in orientation and mobility to young children with visual impairments. There are five interrelated sections, each containing a brief introduction and definition of the skills to be developed. There are also checklists in chart form for individual needs assessment and post-testing, and suggested materials, activities, games, and references appropriate for skill development.

The Body Image section has 23 parts. Basic Concepts and Abilities has 13 parts. Motor Coordination also has 23 parts and these first three sections have checklists at the beginning of each. Sensory Moralities has 5 parts and there is a separate checklist for each. The last section, Pre-cane Skills, differs from the others in that it is a slide-tape presentation.

Schrerrer, B. Tailor made classes. Florida Vocational Journal, 1978, 4 (2), 26-28.

This article describes the adaptions of teaching materials and procedures developed at Florida State University to help students with visual impairments participate in home economics classes in public schools.

Simmons, B. Books for visually impaired young children: An annotated bibliography. Raleigh, NC: North Carolina State Library, 1978. (ERIC Document Reproduction Service No. ED152029.)

This list of four hundred books for visually impaired children in preschool through grade four was compiled from a master list of 1,642 titles. These were analyzed according to type size, spacing, construct and illustrations. Books are listed by title, publisher and date.

Simon, E. and Gillman, A. Mainstreaming visually handicapped preschoolers. Exceptional Children, 1979, 45 (6), 463-464.

In this article, the authors describe the mainstreaming of four visually impaired preschoolers into a regular preschool setting. It is stated that careful and complete preparation must be made to insure the success of a mainstreaming program.

Spittler, M. Games for the development of pre-orientation and mobility skills. New Outlook for the Blind, 1975, 69 (10), 452-456.

This article describes twelve games which can be used with visually impaired children in nursery school through junior high to teach the basic knowledge and skills needed to master the techniques of orientation and mobility.

Stephens, B., Grube, C. and Fitzgerald, J. Cognitive remediation of blind students. Dallas TX: Texas University, 1977. (ERIC Document Reproduction Service No. ED161233.)

This ERIC publication reports a study which was done at the University of Texas on a BEH grant. The purpose was to determine if and to what extent a Piagetian-oriented remedial program would increase blind students' understanding of Piagetian reasoning. Thirteen congenitally blind students and thirteen matched sighted peers were instructed in 45 minute sessions three times per week for a period of seventeen months. The program proved successful. Blind students improved on 22 of 26 reasoning variables as measured by a Piagetian battery whereas a comparable control group made gains on only 7 of the 26 variables. Two manuals were developed as dissemination materials. One was the Training Manual for Teachers of the Visually Handicapped: A Piagetian Perspective, and discusses teachers training procedures. The other was Student Activity Guide: A Piagetian Perspective, which contained 19 learning modules containing 120 students activities.

Strelow, E. and Hodgson, R. Development of spatial sensing systems for blind children. New Outlook for the Blind, 1976, 70 (1), 22-24.

Researchers in New Zealand are developing a short range environmental sensor for congenitally blind children. The use of the sonar based aid enhances the development of spatial concepts.

Struve, N. and others. The effect of an experimental science curriculum for the visually impaired on course objectives and manipulative skills. Education of the Visually Handicapped, 1975, 7 (1), 9-14.

This article describes a study in which students participating in the Science Curriculum Improvement Study were compared to a control group and evaluated in terms of growth in their understanding of content and process areas, as well as in manipulative skills. The experimental group realized significant gains in these areas.

Swallow, R. Piaget's theory and the visually handicapped learner. New Outlook for the Blind, 1976, 70 (7), 273-281.

In this article, the author reviews the relevant literature and sets forth several basic educational tenets based on Piaget's work and the current research. She discusses the importance of concrete experiences with real objects as well as social interactions with adults and peers in order for blind children to gain knowledge about the world.

Swanson, L. and others. Conservation development in the partially sighted child. Psychology in the Schools, 1979, 16 (2), 309-313.

Significant differences were found between groups, tasks, and age levels in this comparative study of partially sighted and sighted blindfolded children at four age levels doing conservation tasks involving weight, mass, and volume.

Thier, H. and Hadary, D. We can do it, too. Science and Children, 1973, 11 (4), 7-9.

This article describes some of the materials and exercises found in the program Adapting Science Materials for the Blind (ASMB).

Wagener, E. Language arts for the visually impaired learner. Language Arts, 1976, 53 (4), 432-434.

A discussion about strengthening the other sense modalities in blind children in order to somewhat ameliorate the lack of stimulation experienced by these children is presented.

Warren,D. Blindness and early childhood development. New York, NY: American Foundation for the Blind, 1977.

This book is as much a reflection of the confusion and uncertainties with regard to visually impaired children as it is an enthusiastic attempt to provide direction to professionals working with these children. Most of the chapters address specific developmental areas and present an integration of knowledge gained from research, case studies, and subjective experience of professionals. The author also looks at areas of controversy such as the concept of critical periods of learning and the effects of early versus late onset of visual impairment. The author suggests directions for approaching the education and training of visually impaired children based upon the empirical evidence. In addition, he makes recommendations for further research to fill in the gaps in our knowledge. The chapters in the book are entitled Perceptual and Motor Development in Children, Perceptual and Motor Development in Infants, Cognitive Development, Intelligence and IQ Tests, Language Development, Social Development, Personality Development, What is Known and What Needs to be Studied?, and Issues in Research Methodology.

Webster, R. A concept development program for future mobility training. New Outlook for the Blind, 1976, 70 (5), 195-197.

This article describes a concept development program used to prepare blind first and second graders for mobility training. The concept areas developed included body imagery, organization, and spatial concepts.

Wilson, J., McVeigh, V., McMahon, J., Bauer, A., and Richardson, P. Early intervention: The right to sight. Education of the Visually Handicapped, 1976, 8, 83-90.

This article describes the Visual Stimulation Preschool Program which was a cooperative effort between the Elwyn Institute and the Delaware County (PA) public schools. The program ran all day, five days a week and, although all subject areas were taught, special emphasis was given to teaching children to use their residual vision. Of the 15 subjects who were followed in this study, all but two were placed in age appropriate public school grades. Two were assessed to be mentally retarded and were placed in appropriate special public school classes. All of the children, except those with mental retardation and two braille readers, were reading at age level. All but three children diagnosed as totally blind demonstrated significant increases in the use of their residual vision.

Music*

INTRODUCTION

Music is both a content area necessary and central in the curriculum, and a significant medium or tool for the reinforcement and transfer of skills and concepts taught in other areas. Because visually handicapped children rely heavily upon aural stimuli, the development and exercise of listening skills is of paramount importance. Discriminative and perceptive listening, therefore, becomes highly significant, and is a prime goal in music classes. In addition, the six-point Child's Bill of Rights in Music, as stated by the Music Educator's National Conference of the National Education Association, provides sound guidance in structuring a music program for visually handicapped young children.

I. Every child has the right to full and free opportunity to explore and develop his capacities in the field of music in such ways as may bring him happiness and a sense of well-being; stimulate his imagination and stir his creative activities; and make him so responsive that he will cherish and seek to renew the fine feelings induced by music.

II. As his right, every child shall have the opportunity to experience music with other people so that his own enjoyment shall be heightened and he shall be led into greater appreciation of the feelings and aspirations of others.

III. As his right, every child shall have the opportunity to make music through being guided and instructed in singing, in playing at least one instrument both alone and with others; and, so far as his powers and interests permit, in composing music.

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*Contributed by Rae S. Ingley

IV. As his right, every child shall have the opportunity to grow in musical appreciation, knowledge, and skill, through instruction equal to that given in any other subject in all the free public educational programs that may be offered to children and youths.

V. As his right, every child shall be given the opportunity to have his interests and power in music explored and developed to the end that unusual talent may be utilized for the enrichment of the individual and society.

VI. Every child has the right to such teaching as will sensitize, refine, elevate, and enlarge not only his appreciation in music, but also his whole affective nature, to the end that the high part such developed feeling may play in raising the stature of mankind may be revealed to him.

General Teaching Objectives

1. To develop, through a broad range of musical experiences, each child's innate love and responsiveness to beauty in sound and movement.
2. To give each child knowledge of the elements of organized sound (music) that will equip him for intelligent listening and meaningful participation and communication, consistent with his ability.
3. To develop cooperative attitudes through concerted effort with others.
4. To develop coordination of body and mind through a variety of rhythmic activities.
5. To enrich the student's understanding of other nations and peoples through the study of their songs, dances, and composers.
6. To acquaint children with their artistic heritage and contemporary musical trends.

7. To guide children to an awareness of the subtle relationship between musical disciplines and the development of personal or self-discipline. The degree of success is directly proportional to the amount and quality of effort spent.

LEVEL ONE

Specific Objectives

Students will:

1. Experience enjoyment in music activities.
2. Find the beat and move to it.
3. Find key center ("do") and match it vocally.
4. Perform solfegge syllables and corresponding hand signs.
5. Move directionally (right, left, up, down, over, under, around, front, back, in, or out).
6. Gain dynamic awareness (loud, soft).
7. Gain tempo awareness (fast, slow).
8. Gain tonal awareness (up, down, same).
9. Become acquainted with many children's songs and poems accompanied by hand and body movements and classroom instruments.
10. Distinguish between noise and music.

LEVEL TWO

Specific Objectives

Students will:

1. Find key center ("do") with voice and tuned instrument.
2. Recognize, count, and tap groupings of beats in 2's and 3's.
3. Perform groupings of tones in simple rhythm patterns, using both voice and instruments.
4. Perform diatonic scale using Kodaly hand signals and syllables.
5. Recognize repeated tonal and rhythmic patterns.

6. Reinforce directional concepts (right, left, up, down, in, out, front, back, over, under, around, through).
7. Move in space (walk, run, march, jump, hop, slide, bounce at knees, skip, sway).
8. Execute conductor's beat in count of 2.
9. While reciting children's poems, develop rhythmic accompaniments using hands, feet, fingers (body instruments), classroom instruments.
10. Learn activity songs, leading specifically in learning body and spatial concepts.
11. Recognize intervalic relationships (scale steps and leap up and down).
12. Play accompaniments on classroom instruments while singing pentatonic songs.

LEVEL THREE

Specific Objectives

Students will:

1. Reinforce first and second grade learnings.
2. Begin understanding relationship between whole note, half note, quarter note.
3. Distinguish between the beat and speech or melody rhythms, and perform them interchangeably and simultaneously, using body instruments and movements.
4. Recognize the basic elements of a musical and spoken phrase (tonal, rhythmic, and dynamic). Compare phrases to determine similarities (repeats) and differences (contrasts).
5. Execute the conductor's beat in patterns of 2, 3, 4.
6. Become acquainted with symphonic sound and instrumental timbres.
7. Construct intervals of 3rd, 5th, 8th.

8. Listen to master composers and their music.
9. Perform songs and dances of many lands (folk music).
10. Develop hand and arm independence.
11. Become acquainted with the piano keyboard, locating tones in relation to black key groupings.
12. Sing and accompany themselves on various classroom instruments, following student director.

ACTIVITIES

Singing songs

Playing instruments

Body movements

Performance on programs

Discussion

Listening purposefully to instructor, recordings, films, other students, visiting performers.

CAREER EDUCATION*

A career encompasses educational, vocational, and personal planning for a lifetime of activity. Career planning takes into account the goals of each individual whether he/she chooses to work in industry, in a profession, or in business. It includes planning for the young, as well as for those who are nearing the completion of their work careers. Career planning should begin as early as possible. Beginning in early childhood and continuing through the regular school years, career education should extend its time horizons from early childhood through the 12th grade.

A refreshing and challenging characteristic of the career education movement of the 1970's was the attempt to coordinate the efforts of all teachers for the sake of the individual student. This career education movement caused many teachers to write curriculum in a different way, to add and modify facilities, and to change from teaching "what everyone should know" to preparing materials for "individuals". With this as a guiding principle, certain fundamental concepts of career education have evolved.

1. Preparation for successful working careers shall be a key objective to all education.
2. Every teacher in each course will emphasize the contribution that subject matter can make to a successful career.
3. "Hands-on occupational experiences" will be used as a method of teaching and motivating the learning of abstract or academic content.
4. Preparation for careers will be recognized as the composite of work attitudes, human relations skills, orientation to the nature of the working world, exposure to alternative career choices, and the acquisition of actual job skills.

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* Contributed by Barbara Stevenson

5. Learning will not be reserved for the classroom; learning environments for career education will also be identified in the home and the community.

Let us now explore how blindness may affect the development of a career.

Two people of the same age, educational background, and socioeconomic status may view their vision loss quite differently. In some instances, an individual may learn to substitute one of the other senses for the use of sight rather quickly, either through trial and error or as a result of special training.

Others, however, some of whom have been blind since childhood, are unable to make a satisfactory adjustment to the loss of their sight. Lack of adjustment to blindness will interfere considerably with successful progress in career planning and development.

Our society places great value on the ability to see. The blind person must therefore seek ways and means of substituting for loss of sight in order to master the many chores essential to active daily living. In a broad sense, what a blind person gains through the mastery of techniques and the use of devices is speed a quality that is necessary to overcome the loss of sight in the development of a career. Failure to fully develop the social, recreational, educational, and training areas will result, of course, in a way of life that is limited or confining. Mastery of many skills and the cultivation of abilities that enable a student to compete effectively with others can offer a richly rewarding and satisfying way of life in a competitive world.

In choosing an occupation, many people without sight rely strongly on occupations that have been practiced successfully by blind people. For many years, this was considered to be a wise and logical approach to occupational

choice. Today, however, this approach is no longer necessary. As a result of advanced technology and greater acceptance by the seeing community, blind people are venturing into new occupations and developing careers that would not have been possible a few years ago.

An early childhood program to develop career skills for visually impaired children should address the following areas:

SELF

1. Differentiation and awareness of self.
2. Objectification of self before others (i.e., ability to present self objectively to others).
3. Acquiring a sense of agency (i.e., personal control over environment).
4. Acquiring basic interpersonal skill patterns.
5. Acquiring respect for other people and the work they do.

WORK AND OCCUPATIONS

1. Acquiring appropriate work habits.
2. Awareness of basic concepts of work and leisure.
3. Acquiring knowledge about and identification with people as workers.
4. Beginning awareness of economic factors affecting self, family, school, and community.

EDUCATION

1. Awareness of importance of learning.
2. Development of a positive attitude toward learning.
3. Awareness of the relevance of subject matter in home and community.

DECISION MAKING

1. Awareness of choices and their consequences.
2. Awareness of basic problem solving techniques.

Physical Education*

LEVEL I

The first level of physical education is designed to build on preschool skills in movement, and to move from large muscle to small muscle usage. The course also includes game play, both formal and informal. Fitness is stressed in areas of running, jumping, and throwing along with acquainting students to the swimming pool and basic swimming skill introduction through water games and activities. Concept development is a must at this stage of growth and these are implemented in the program in all areas whenever feasible.

Objectives

1. To orient students to the physical education building and play areas.
2. To develop better use of vision and locomotion skills.
3. To teach the fundamental movements.
4. To teach team play and the importance of helping one another.
5. To develop large and small muscle coordination.
6. To teach elementary games and skills.
7. To acquaint students with the swimming pool area and water.
8. To accommodate individual differences and skill levels.

Course Content

I. Concept Development and Body Awareness Activities.

   A. Parachute Play

   B. Relays

   C. Games Involving Concepts

   D. Rhythms and Records Involving Concepts

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*Contributed by Carolyn Wright

II. Active Games to teach following directions, team play, rules, and sportsmanship.

A. Flowers and the Wind

B. Dog Catcher

C. Red Light

D. Mother May I

E. China Wall

F. Fruit Basket Turn Over

G. Freeze Tag

H. Follow the Leader

I. Tisket-a-Tasket

J. Going to Kentucky

K. Fire Engine

III. Exercise and Physical Fitness to improve strength, endurance, coordination, and agility.

A. Relays

B. Exercises

C. Running

D. Throwing balls of various sizes and shapes

E. Hopping, skipping, other movement concepts

F. Jump rope

G. Tee Ball and Kick Ball

H. Gymnastics

I. Concept Development (Obstacle Course)

J. Wrestling lead-up games

IV. Swimming - Orientation to pool and water; beginner skills in swimming with individual help as proposed by The American Red Cross advancing as skills are mastered in sequence.

A. Water play

B. Water games

C. Basic skills

Evaluation

1. Ability to demonstrate and apply basic concepts in games and play activities.
2. Participation in class activities.
3. Knowledge of and ability to perform swimming and game skills.
4. Improvement in individual's skill proficiency.
5. Growth in sportsmanship and conduct.
6. Participation in group play.

LEVEL II

A level II physical education student should be proficient in performing the basic movement skills as running, jumping, skipping, hopping, etc. The student should be oriented to the gymnasium and able to follow instructions. A pre-test of skills may be administered to determine individual proficiency.

The level II curriculum contains additional skills and reinforcing activities in body concepts and movement skills. Exercises and fitness activities to improve agility, coordination, endurance, and balance are also included. The program uses as much individualized instruction as possible to improve each child's skill level. Swimming is continued to advance each individual's ability in this enjoyable and important activity.

Objectives

1. To develop better use of vision and locomotion skills.
2. To improve body concepts.

3. To provide for physical fitness and exercise for good health.

4. To develop coordination, balance, agility, speed, and endurance.

5. To help in developing self-confidence.

6. To provide an opportunity for team play and individual play to develop healthy attitudes and sportsmanship.

7. To acknowledge and address individual differences.

Course Content

I. Developmental Activities to improve areas of motor skill performance.

A. Relays

B. Games

C. Gymnastics

D. Throwing Skills

E. Parachute Play

F. Formal exercises

G. Jump Rope

H. Batting Skills

II. Movement and Coordination Activities

A. Rhythms

B. Ball skills

C. Jumping

D. Hoop Activities

E. Balance Activities

F. Obstacle Course

G. Dance Activities

III. Swimming - Beginning skills using Red Cross manual for instruction. Pretest each student to determine level and skill proficiency.

Evaluation

1. Pre- and post- testing of skills.
2. Checklist of skill performance.
3. Checklist of skills in swimming accomplished.
4. Knowledge and understanding of activities through participation.
5. Participation in class activities.
6. Growth in sportsmanship, conduct, and attitudes.

LEVEL III

The level III student should be well founded in the basic motor skills. The student should be able to follow directions and participate in group activities. By the third level, the student should be advanced from a beginner to an advanced beginner's level in swimming.

The level III curriculum includes advanced skills in movement, beginning skills in sports such as volleyball, football, soccer, aerial ball, goalball, and basketball in the form of lead-up games, rhythms and dance, individualized instruction in swimming, and recreational activities.

Objectives

1. To form skills useful to play.
2. To develop gross and fine motor skills.
3. To develop an understanding of the values of winning and losing.
4. To develop a wholesome personality and attitude toward fitness and exercise.
5. To learn safety rules in sports.
6. To set and obtain individual goals.
7. To form a good relationship with peers.

Course Content

I. Motor Performance Activities

A. Exercises

B. Relays

C. Active Games

D. Parachute Play

E. Hoop Activities

F. Trampoline and gymnastics

II. Rhythms

A. Folk Dance

B. Creative Play

C. Singing Games

D. Musical Games

III. Lead-Up Games

A. Four-squares

B. Newcombe

C. One ole Cat

D. Fist Ball

E. Dodgeball

F. Goal Line Soccer

G. Horse

H. Around the World

I. Keep Away

J. Bounce Ball

K. Handball

L. Kickball

M. Indian Wrestle

N. Takedown

O. Steal the Bacon

IV. Swimming - advanced skills in beginner swimming or individual skill instruction.

V. Active Games

A. Aerial Ball

B. Flag Football

C. Soccer

D. Gymnastics

E. Wrestling

F. Goalball

G. Duck Pin Bowling

H. Skating

I. Rhythmic Activities

Evaluation

1. Pre- and post- testing of individual motor skills.
2. Participation in class activities.
3. Knowledge of games and skills used.
4. Demonstration of skills and rules in game situations.
5. Demonstration of good sportsmanship, attitudes, and conduct.

Fingermath Instruction*

Fingermath instruction is introduced at the first level of the early childhood program and is continued throughout grade school. This method of computation is quite valuable in improving a child's efficiency with regard to both accuracy and speed in mathematical operation. At the first level the child initially uses the method to find sums and differences up to ten on his right hand. Once he begins to master this, sums and differences of groups of ten are introduced for computation on his left hand. Following this, numbers up to 99 are set on both hands and sums and differences of two-digit numbers with no carry-overs are computed. Once this is mastered, the student is introduced to regrouping with regard to sums and differences crossing over ten. When the student understands this principle, sums and differences of any numbers up to 100 are computed.

To avoid boredom resulting from working with numbers in isolation, common everyday word problems involving money, objects, animals, games and the like are presented. Short multiplication and division are introduced at the first level via repeated addition and subtraction.

At the second level the student increases his efficiency with the various operations and begins to use what is referred to as second and third stage techniques. Second stage refers to the use of short cuts with regard to the number 5. Third stage employs similar short cuts involving the number 10. Both increase speed and efficiency of operation.

At the third level the four primary operations involve numbers extending into the thousands. At some point along the way, depending upon the motivation and practical application of the child involved, the Cranmer abacus is introduced. This marvelous, handy tool is capable of recording the equivalent of thirteen hands representing numbers up to 9,999,999,999,999.

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*Contributed by Tom Ridgeway

All fingermath operations are directly applicable to the abacus. Hence, the child has the choice of using either his fingers or the abacus in any given situation.

In an early childhood program, instruction in fingermath should be given three times a week ranging from 15 to 30 minutes a day. The beneficial results of a fingermath program include increased accuracy and greater ease of operation. The method is explained in considerable detail in the following sources:

THE COMPLETE BOOK OF FINGERMATH, by Edwin M. Lieberthal, McGraw-Hill Book Co. Copyright 1979.

CHISANBOP FINGER CALCULATION, by Pai and Lieberthal, Chisanbop Enterprises, Inc. Copyright 1977.

*Guide for Teaching Beginning Braille Reading

1. Work with one child at a time until reading is under way; grouping according to reading ability may come later.

2. Sit across from the child. Support his hands and try to prevent the hands from collapsing flat. Have the child use the pads of his fingers, not the tips.

3. Plan frequent but short reading periods as you are getting under way. Introduce, provide exercise drills, and review. Use success and rewards for reinforcement.

4. You will begin by teaching letters, not words, to educationally blind students as the fingers can only cover one letter (or cell) at a time. All braille reading is done cell by cell, rather than in sweeping "glances" or skimming, as sight readers read.

   a. Present the letters to be learned tactually. The following order is recommended:

      a, b, c, k, l, m
      d, e, n, o,
      f, g, p, q, u
      h, i, r, s, j, t, v, x, y, z, and finally w

   b. Introduce one letter at a time on large sheets of paper taped to the desks, with the right corner cut off, or with "number 1" brailled in the corner, In this way, the child may be encouraged to check for the upper right corner to see if the paper is right side up.

   c. The teacher may braille lines of one letter. Have the child follow across the line saying each letter, receiving praise, proceeding letter by letter using both hands in good position, with at least 3 fingers of each hand "reading".

   d. When the child reaches the end of the line with both hands, teach him to follow back on the same line with both hands. Then drop down to the next line with both hands.

   e. The next reading period, review the first letter. On another sheet of paper, introduce "b". Give him lines of "b" to follow, when successful.

   f. Intermix "a" with "b" during another reading period. Then offer "a" alone, "b" alone, then sometimes "ab" together, etc.

   g. When the child has mastered the above, introduce the letter "c", and so on, always providing lines of braille letters to read. Introduce little games with cards of the letters (right hand corners cut off or braille #1). Play "fish" and other games to stimulate enthusiasm.

*Source unknown.

h. If child begins reading the braille with his eyes, you've got a clue; change him to type reading!

i. Label objects in room in braille and large type.

j. Promote auditory discrimination by having the children sound as they read across the lines. Example: /l/ sound, rather than saying or calling the letter name.

k. As soon as possible, put letters together to form words.

l. Continue to add the letters, making them into words as you're able, until all of the letters are learned.

m. Use words then sentences as you have enough letters. Include punctuation, for an alert child will find the "period" at the end of a sentence and ask what it is. (It simply means "stop" or "end").

n. Add the numbers, either along the way of following the introduction of the letters.

o. Teach braille writing using the brailler simultaneously for reinforcement WITHOUT UNDUE PRESSURE, Emphasize the following mechanics:

   1. Use correct posture: back straight, feet on floor, upper arms and elbows at sides, outstretch lower arms and hands FROM THE ELBOWS to reach the page. Is the height of the child in the chair to table correct? Elbows and wrists should be at an even level. Children should not "reach up" to the keys.

   2. Use the cushions of the fingers, as there is very little sensation on the tip of the finger. Find this area on your fingers. Fingers will then read at an acute angle to the page, not a perpendicular.

   3. Minimize up and down motions in reading braille, as vertical movement slows reading dramatically.

   4. Use a light touch. Pressure may erase the dots and it decreases tactual discrimination.

p. Muscular control and relaxation are important factors.

   1. Excessive nervousness causes a temporary sharpening of the perception of tactile reading, but it soon brings on exhaustion which causes a dulling of perception and a decrease in the accuracy of the movements of the muscles of the upper arm, shoulders, the back, and abdomen.

   2. Relaxation during reading is most important if it is to be interesting, pleasurable, and sustained.

   3. One sign of undue tenseness is whitening of the fingertips.

4. Discourage lip movements, as this slows reading.

5. Master the contractions, which are introduced as they are encountered in reading texts. Grade II Braille is taught from the beginning.

6. Aim for accuracy with as much speed as possible.

7. Encourage two-handed reading. As soon as the child is well advanced, teach the sweep motion: the left hand reads the first part of the line, the right the last half of the line. While the right hand reads the right half of the line, the left drops down to the left half of the next line. Speed is increased with the employment of this technique.

Some Suggested Activities for Beginning Reading

The preprimer may be introduced after a child has a workable reading and meaning vocabulary of basic words. There are other interesting activities to stimulate or continue high interest in reading.

1. Since children like to read their own names, they can be written to be read on pictures, materials, and toys. Names can be used with action verbs, as walk, run; then adjectives can be added and finally names.

2. Language experience stories composed by children with their teachers can be interesting, often contain a simple vocabulary, short sentences, and much repetition. The unit should be brailled by the teacher and read by the children. The teacher may guide the hands of early readers to help them "read" the sentences, phrases, and words.

3. As soon as the child can read several sheets of sentences correctly, the sheets may be bound into books to be taken home. This serves as motivation for reading and arouses interest at home. The same technique may be used later with story sheets.

4. Dramatizations and "playing out" stories and unfamiliar concepts may be used frequently to help a story come alive. Real props may be used and gesturing learned and practiced.

5. The physical attractiveness of books is important. Covers may be attractively decorated. For example, a cowboy story may have a demin cover, a story about a rooster may have feathers pasted on it. Pages of different lengths, books and pages of unusual shapes, may increase interest in reading.

6. Personal or group notes on the bulletin board, when changed often, create interest in reading.

7. Communications brailled from newspapers and letters and invitations should be scattered around the room where they may be found easily and read.

8. Children enjoy cutting up stories, sentences, or phrase units and putting them back together, in order.

9. A vocabulary box for each child.

10. When a child is at home sick, the others may write (or dictate to the teacher) stories to be sent home.

11. Tape surprise riddles or poems to desk tops of the children!

12. Exhibits and aids around the room may be labeled.

13. A teacher may braille surprise comments at the end of a corrected paper.

14. Directions for the care of equipment may be taped on the various audio aids used in the classroom.

15. Tags on presents for family members may be written in braille.

16. When taking a field trip, the signs seen along the way could be brailled later: "Apartment for Rent," "For Sale", "Men at Work", and "Garage" may be typical of those to be seen.

17. Talking Books and other recordings should be used for enrichment and supplementary purposes, but not a substitute for active learning exercises.

Although reading activities with blind children very closely parallel reading activities with sighted children, sometimes techniques other than those used with sighted children are most effective. The purposes of the techniques should be analyzed and then the most effective manner of accomplishing these ends should be utilized. For example, the purposes of pictures with sighted children has been stated as helping them to "compare, recognize similarities and differences, make associations, recognize sequence, develop memory span, exercise judgment, interpret and predict causes and effect." With educationally blind children, other experiences must be used to accomplish these goals.

Optacon Reading Skills

Pre-requisites

1. Complete pre-reading skills checklist
2. Have average to above average braille reading skills

Pre-training Checklist

1. Indicates knowledge of the following relationships:
   a. top-bottom-middle
   b. left-right
   c. above-below
   d. toward-away-from
   e. up-down
   f. across-back
   g. height-width
   h. centered

2. Recognizes basic geometric shapes on Optacon

3. Indicates knowledge of kinds of lines
   a. vertical
   b. horizontal
   c. diagonal
   d. curve

Stage I

1. Indicates knowledge of equipment and rules for basic care
   a. on/off switch
   b. removes and replaces camera in holder
   c. positions camera in tracking aid
   d. positions finger in tactile array
   e. adjusts magnification control
   f. attaches battery charger
   g. keeps lens cable straight

2. Tracks with tracking aid

3. Recognizes upper case alphabet

4. Recognizes punctuation marks

5. Recognizes numerals

6. Recognizes lower case alphabet

7. Reads with various type styles

8. Adjusts camera retina

9. Tracks free-hand

Stage 2

1. Adjusts threshold and intensity control independently

2. Indicates knowledge of:
   a. use of invert switch
   b. use of battery-check button
   c. use of circuit breaker
   d. how to pack Optacon in soft-pack

3. Reads varied selection for speed-building

4. Reads different printed formats
   a. Level of difficulty
      1) easy - page filled with words; little empty space, consistently written material, consistent placement on page, easy print style
      2) medium - moderate use of pictures, different types of materials, different print styles
      3) hard - inconsistent placement of material on page, use of many different types of materials or print styles, column format
   b. Types of formats
      1) table of contents
      2) page lay-out with pictures and print
      3) page-numbering systems
      4) varieties of type styles on one paper
      5) index
   c. Different kinds of reading materials
      1) textbooks
      2) library books
      3) newspaper
      4) magazines
      5) telephone directory
      6) dictionary
      7) encyclopedia
      8) tables and charts
      9) type written mail